

## Math 7 Notes Chapter 2 Find Percents of a Number Using Mental Math Strategies

Percent of \_\_\_\_\_  
means  
↓  
Part of "the whole thing"

100% of 1600 = 1600  
50% of 1600 = 800  
25% of 1600 = 400

Find 10% of a number

THINK

$10\% = \frac{1}{10}$  which means to  $\div$  by 10  
(move decimal point 1 place left)

Example: 10% of 30  
③      30.

Find 1% of a number

THINK

$1\% = \frac{1}{100}$  which means to  $\div$  by 100  
(move decimal point 2 places left)

Example: 1% of 5000  
⑤0      5000.

Sometimes we can use "unit fractions" to find the percent of a #

Numerator is one

To find $\frac{1}{2}$ of a number, divide by 2	<b>Example</b> 50% of 2400 $\div$ $\frac{1}{2}$ of <u>2400</u> $24 \div 2 = 12$ Add 2 zeroes <u>1200</u>
To find $\frac{1}{3}$ of a number, divide by 3	33. $\bar{3}$ % of 270 $\frac{1}{3}$ of <u>270</u> $27 \div 3 = 9$ Add 1 zero <u>90</u>
To find $\frac{1}{4}$ of a number, divide by 4	25% of 36 $\frac{1}{4}$ of <u>36</u> $36 \div 4 = 9$ <u>9</u>

To find  $\frac{1}{5}$  of a number, divide by 5

**Example**

20% of 3000  
 $\frac{1}{5}$  of 3000  
 $30 \div 5 = 6$  Add 2 zeroes  
600

To find  $\frac{1}{6}$  of a number, divide by 6

16. $\bar{6}$ % of 420  
 $\frac{1}{6}$  of 420  
 $42 \div 6 = 7$  Add 1 zero  
70

To find  $\frac{1}{8}$  of a number, divide by 8

12.5% of 32  
 $\frac{1}{8}$  of 32  
 $32 \div 8 = 8$   
8

To find  $\frac{1}{9}$  of a number, divide by 9

11. $\bar{1}$ % of 270  
 $\frac{1}{9}$  of 270  
 $27 \div 9 = 3$  Add 1 zero  
30

For fractions that are NOT unit fractions, to find the percent of a #, we find the unit fraction for that denominator first and then multiply by the numerator.

To find  $\frac{2}{3}$  of a number, find  $\frac{1}{3}$  of the number and then multiply by 2

Example  
 $66.\bar{6}\%$  of 2400  
 $\frac{2}{3}$   
 $\frac{1}{3}$  of 2400 = 800  
 $800 \times 2$   
1600

To find  $\frac{3}{4}$  of a number, find  $\frac{1}{4}$  of the number and then multiply by 3

75% of 280  
 $\frac{3}{4}$   
 $\frac{1}{4}$  of 280 = 70  
 $70 \times 3$   
210

To find  $\frac{2}{5}$  of a #, first find  $\frac{1}{5}$  and then multiply by 2

Example  
 40% of 35  
 $\frac{2}{5}$   
 $\frac{1}{5}$  of 35 = 7  
 $7 \times 2$   
14

To find  $\frac{3}{5}$  of a #, first find  $\frac{1}{5}$  and then multiply by 3

60% of 250  
 $\frac{3}{5}$   
 $\frac{1}{5}$  of 250 = 50  
 $50 \times 3$   
150

To find  $\frac{4}{5}$  of a #, first find  $\frac{1}{5}$  and then multiply by 4

80% of 40  
 $\frac{4}{5}$   
 $\frac{1}{5}$  of 40 = 8  
 $8 \times 4$   
32

To find  $\frac{2}{100}$  of a number, first find  $\frac{1}{100}$  and multiply by 2

2% of 700  
 $\frac{2}{100}$   
 $\frac{1}{100}$  of 700  
 $7 \times 2$   
14

To find  $\frac{3}{100}$  of a number, first find  $\frac{1}{100}$  and multiply by 3

3% of 6000  
 $\frac{3}{100}$   
 $\frac{1}{100}$  of 6000 = 60  
 $60 \times 3$   
180

Do the same for 4%, 5%, ...9%

To find  $\frac{2}{10}$  of a number, first find  $\frac{1}{10}$  and multiply by 2

20% of 80  
 $\frac{2}{10}$   
 $\frac{1}{10}$  of 80 = 8  
 $8 \times 2$   
16

To find  $\frac{3}{10}$  of a number, first find  $\frac{1}{10}$  and multiply by 3

30% of 900  
 $\frac{3}{10}$   
 $\frac{1}{10}$  of 900 = 90  
 $90 \times 3$   
270

Do the same for 40%, 50%, ...90%

Use this strategy for all non-unit fractions we have memorized.

Examples

37.5% of 320  
 $\frac{3}{8}$   
 $\frac{1}{8}$  of 320 = 40  
 $40 \times 3$   
120

83.3% of 180  
 $\frac{5}{6}$   
 $\frac{1}{6}$  of 180 = 30  
 $30 \times 5$   
150

77.7% of 450  
 $\frac{7}{9}$   
 $\frac{1}{9}$  of 450 = 50  
 $50 \times 7$   
350

62.5% of 4800  
 $\frac{5}{8}$   
 $\frac{1}{8}$  of 4800 = 600  
 $600 \times 5$   
3000